

1 What is claimed is:

2 1. A miniature vehicle comprising:

3 a frame;

4 a propulsion system mounted on said frame;

5 a hydraulic system mounted on said frame;

6 a first actuator functionally connected to said propulsion system; and

7 a second actuator functionally connected to said hydraulic system.

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9 2. The miniature vehicle of claim 1, wherein said propulsion system and said hydraulic
10 system operate to perform work.

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12 3. The miniature vehicle of claim 1, further comprising a remote-control system
13 functionally attached to said first actuator and said second actuator.

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15 4. The miniature vehicle of claim 3, wherein said remote-control system comprises a radio-
16 control system.

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18 5. The miniature vehicle of claim 1, wherein said miniature vehicle comprises a scale-size
19 version of a full-size vehicle.

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21 6. The miniature vehicle of claim 1, wherein said propulsion system comprises a plurality of
22 metal tracks.

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1 7. The miniature vehicle of 6, wherein said propulsion system further comprises a discrete
2 control mechanism for each of said plurality of metal tracks.

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4 8. The miniature vehicle of claim 6, wherein said propulsion system further comprises:

5 a power source;

6 a motor functionally connected to said power source, wherein said motor comprises an
7 output shaft;

8 a first gear coaxially attached to said output shaft;

9 a second gear engaged with said first gear;

10 a drive shaft coaxially attached to said second gear; and

11 a third gear coaxially attached to said drive shaft, wherein at least one of said plurality of
12 metal tracks engaged with said third gear.

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14 9. The miniature vehicle of claim 8, wherein said power source comprises a gel-cell battery.

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16 10. The miniature vehicle of claim 8, wherein said motor comprises an electric motor.

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18 11. The miniature vehicle of claim 8, wherein said propulsion system further comprises a
19 plurality of rollers attached to said frame and engaged with each of said plurality of metal tracks.

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21 12. The miniature vehicle of claim 6, wherein each of said plurality of metal tracks further
22 comprises a plurality of metal links, each of said plurality of metal links having an inner surface,
23 wherein a pair of spaced apart connectors project from the inner surface, and wherein the pair of

1 spaced apart connectors of each of said plurality of metal links is pivotally attached to the pair of
2 spaced apart connectors of an adjacent metal link so as to form a continuous loop.

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4 13. The miniature vehicle of claim 1, further comprising a body mounted on said frame.

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6 14. The miniature vehicle of claim 13, wherein said body comprises a bulldozer body.

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8 15. The miniature vehicle of claim 13, wherein said body comprises a truck body.

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10 16. The miniature vehicle of claim 13, wherein said body comprises a crane body.

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12 17. The miniature vehicle of claim 13, wherein said body comprises a tank body.

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14 18. The miniature vehicle of claim 1, further comprising a video camera mounted on said
15 frame.

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17 19. The miniature vehicle of claim 1, further comprising a sensor mounted on said frame.

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19 20. The miniature vehicle of claim 1, further comprising a sample gatherer mounted on said
20 frame.

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22 21. The miniature vehicle of claim 1, wherein said hydraulic system comprises:
23 a master cylinder having an input shaft;

1 a slave cylinder having an output shaft; and
2 a hydraulic line in fluid communication between said master cylinder and said slave
3 cylinder.

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5 22. The miniature vehicle of claim 1, wherein said first actuator comprises:
6 a power source; and
7 an electronic speed control electrically connected to said power source.

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9 23. The miniature vehicle of claim 1, wherein said second actuator comprises:

10 a power source;
11 a motor operably connected to said power source;
12 an output shaft extending from said motor;
13 a pinion gear coaxially attached to said output shaft; and
14 a rack transversely engaged with said pinion gear and rigidly attached to said hydraulic
15 system.

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17 24. The miniature vehicle of claim 23, further comprising:
18 a switch functionally connected between said power source and said motor; and
19 a servo functionally attached to said switch.

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21 25. The miniature vehicle of claim 24, further comprising a remote-control system
22 functionally attached to said servo.

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1 26. The miniature vehicle of claim 1, further comprising a bulldozer blade assembly mounted
2 functionally on said frame.

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4 27. The miniature vehicle of claim 26, wherein said bulldozer blade assembly comprises
5 a bulldozer blade and a bulldozer blade arm, wherein said bulldozer blade arm is pivotally
6 connected to said frame, functionally connected to said hydraulic system, and rigidly connected
7 to said bulldozer blade.

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9 28. The miniature vehicle of claim 1, further comprising a ripper assembly.

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29. The miniature vehicle of claim 28, wherein said ripper assembly comprises:
a parallelogram ripper arm having a first member, a second member, a third member, and
a fourth member, wherein said first member is pivotally attached to a first end of said third
member and pivotally attached to a first end of said fourth member, said second member is
pivotally attached to a second end of said third member and pivotally attached to a second end of
said fourth member, and said first member is rigidly attached to said frame; and
a multi-shank ripper rigidly connected to said second member and functionally connected
to said hydraulic system.

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25 30. A miniature vehicle comprising:

26 a frame;

27 a propulsion system mounted on said frame;

28 a hydraulic system mounted on said frame;

1 a first actuator functionally connected to said propulsion system;
2 a second actuator functionally connected to said hydraulic system; and
3 a remote-control system functionally attached to said first actuator and said second
4 actuator;

5 wherein the miniature vehicle further comprises a scale-size version of a full-size
6 vehicle,

7 wherein said propulsion system further comprises a plurality of metal tracks, each of
8 said plurality of metal tracks having a discrete control mechanism, and

9 wherein said propulsion system and said hydraulic system are operable to perform
10 work.

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12 31. A hydraulic system for a miniature vehicle comprising:

13 a master cylinder having an input shaft;

14 a slave cylinder having an output shaft; and

15 a hydraulic line in fluid communication between said master cylinder and said slave
16 cylinder.

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18 32. The hydraulic system of claim 31, further comprising an actuator attached to said input
19 shaft.

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21 33. The hydraulic system of claim 32, wherein said actuator comprises:
22 a power source;
23 a motor operably connected to said power source;

1 an output shaft extending from said motor;
2 a pinion gear coaxially attached to said output shaft; and
3 a rack transversely engaged with said pinion gear and rigidly attached to said input shaft.

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5 34. The hydraulic system of claim 33, further comprising:
6 a switch functionally connected between said power source and said motor; and
7 a servo functionally attached to said switch.

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9 35. The hydraulic system of claim 34, further comprising a remote-control system
10 functionally attached to said servo.

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12 36. The hydraulic system of claim 35, wherein said remote-control system comprises a radio-
13 control system.

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15 37. The hydraulic system of claim 33, further comprising a bulldozer blade assembly
16 functionally connected to said output shaft.

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18 38. The hydraulic system of claim 33, further comprising a ripper assembly to said output
19 shaft.

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21 39. A metal track for a miniature vehicle comprising a plurality of metal links pivotally
22 attached to one another so as to form a continuous loop.

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1 40. The miniature vehicle of claim 39, wherein each of said plurality of metal tracks further
2 comprises a plurality of metal links, each of said plurality of metal links having an inner surface,
3 wherein a pair of spaced apart connectors project from the inner surface, and wherein the pair of
4 spaced apart connectors of each of said plurality of metal links is pivotally attached to the pair of
5 spaced apart connectors of an adjacent metal link so as to form a continuous loop.

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